

## REMARKS/ARGUMENTS

The non-final Office Action of September 10, 2003, has been fully considered by the Applicants. In the September 10, 2003 Office Action, the Examiner rejected claims 1-24. In view of the amendments and the following discussion, Applicants request that the Examiner's objections and rejections be withdrawn and that claims 1-24 be allowed.

The Examiner objected to claims 1, 7-8, 11, 12 and 15-16 as improperly containing periods in places other than at the end of the claim or in abbreviations. While the Applicants feel that the periods were properly used in abbreviations, Applicants note that the claims objected to by the Examiner have been amended to remove the periods. Applicants therefore request that the objection of claims 1, 7-8, 11, 12 and 15-16 be withdrawn.

Claims 1-24 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Applicants traverse this rejection.

The Examiner stated that the phrase "substantially free of an oxidizing agent" in claims 1, 8, 11, 12 and 16, render those claims indefinite because the claims necessarily contain nitrate ions which are oxidizing agents. The Examiner then stated that it was unclear whether the claims contain nitrate ions or are substantially free of an oxidizing agent. The Examiner also rejected as indefinite claims dependent from claims 1, 8, 11, 12 and 16. Applicants note that claims 1, 8, 11, 12 and 16 include a composition being substantially free of oxidizing agents other than nitrate ions. Thus, the claims make it clear that the composition contains nitrate ions and is substantially free of other oxidizing agents. Consequently, claims 1, 8, 11, 12 and 16, and any claims dependent therefrom are definite because they particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Applicants therefore request that the rejection of claims 1-24 under 35 U.S.C. §112, second paragraph, be withdrawn.

Claims 1-2 and 11-12 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,801,337 to Higgins. Applicants traverse this rejection.

The Examiner stated that Higgins teaches a coating composition for coating zinc coated articles and a method for using such a composition. According to the Examiner, the Higgins composition contains Cr(III) ions, Co(II) ions, nitrate ions and water, and further teaches a ratio of nitrate to  $(Cr^{3+} + Co^{2+})$  within the amount claimed. The

Examiner also stated that the composition in Higgins is substantially free of Cr(VI) and also substantially free of an oxidizing agent.

Applicants submit that Higgins does not anticipate claims 1-2 and 11-12 because Higgins fails to teach every feature of those claims. In order to anticipate a claim, a reference must teach every feature of that claim. M.P.E.P. §2131. Applicants submit that, contrary to the Examiner's assertion, the Higgins reference fails to teach a ratio of nitrate to  $(Cr^{3+} + Co^{2+})$  of less than 1.5:1. To support his assertion that Higgins teaches the claimed ratio, the Examiner merely points to the examples in column 3 of the Higgins reference. Applicants note, however, that a calculation of the nitrate to  $(Cr^{3+} + Co^{2+})$  in examples 1 and 2 shows a ratio of 2.1:1 and 2.8:1 respectively. These are clearly outside of the claimed ratio of less than 1.5:1. Outside of the examples, the Higgins reference does not teach any other particular ratios and fails to explicitly teach a ratio of 1.5:1. Consequently, the Higgins reference fails to teach every feature of claims 1-2 and 11-12 and, therefore, cannot anticipate the claims. Applicants therefore request that the rejection of claims 1-2 and 11-12 under 35 U.S.C. §102(b) be withdrawn.

Applicants further submit that Higgins is not relevant prior art. Specifically, Higgins teaches a conversion coating applied at extremely alkaline conditions, i.e., at a pH of greater than 11. The Examiner will note that a system as presently described herein (see e.g., claims 6 and 10) is run under acidic conditions. Thus, a person skilled in the art would not expect the teachings of Higgins to produce the benefits of the present systems.

Claims 1-6 and 11-12 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,578,122 to Crotty. Applicants traverse this rejection.

The Examiner stated that Crotty teaches a coating composition for zinc coating articles and a method for using such composition wherein the composition contains Cr(III) ions, Co(II), nitrate ions, film polishers, sulfate and pH of 1.2 to 2.5. According to the Examiner, Crotty also teaches a ratio of nitrate to  $(Cr^{3+} + Co^{2+})$  within the claimed amount.

Applicants submit that Crotty fails to teach the claimed ratio and therefore fails to anticipate claims 1-6 and 11-12. Claims 1-6 and 11-12 include a composition having a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1. Crotty completely fails to teach this feature. At column 4, lines 51-55, Crotty

teaches a “ratio of nitrate ions to the sum of chromium and activating metal ions within a range of about 4:1 to about 100:1 or higher.” (emphasis added). Further, the examples in Crotty all disclose ratios above 4:1. These are clearly outside of the claimed ratio of less than 1.5:1. There is no other disclosure in Crotty that teaches a ratio within the ratio set forth in claims 1-6 and 11-12. Consequently, Crotty completely fails to teach every feature of claims 1-6 and 11-12 and, therefore, fails to anticipate the claims. Applicants therefore request that the rejection of claims 1-6 and 11-12 under 35 U.S.C. §102(b) be withdrawn.

Claims 7 and 13-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Higgins. Applicants traverse this rejection.

According to the Examiner, Higgins teaches chromium, cobalt, and nitrate concentrations that overlap the concentrations set forth in claims 7 and 15. The Examiner also contends that Higgins teaches a temperature range for treatment and time of contact that overlaps with the temperature and time set forth in claims 13 and 14. The Examiner acknowledges that Higgins fails to explicitly teach the range of composition and process conditions set forth in claims 7 and 13-15. The Examiner contends, however, that a person of ordinary skill in the art would have considered the invention of claims 7 and 13-15 to have been obvious because the concentration of the components and the processing conditions overlap those of the instant claims.

Applicants submit that claims 7 and 13-15 are not obvious in view of Higgins. First, claim 7 is dependent from claim 1 and claims 13-15 are dependent from claim 12 and, therefore, include all the elements or features of the claims from which they depend. Each of claims 7 and 13-15, therefore, include a composition having a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1. As previously discussed, Higgins completely fails to teach this ratio. “To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” M.P.E.P. §2143.03. Because Higgins does not teach or suggest the claimed ratio it fails to teach or suggest all the limitations or features of the present invention, including claims 7 and 13-15. Further, the Examiner has failed to provide any motivation for a person skilled in the art to modify Higgins to arrive at a method or coating bath having a composition with an  $\text{NO}_3^- / (\text{Cr}^{3+} + \text{Co}^{2+})$  mole ratio of less than 1.5:1. Consequently, claims 7 and 13-15 are non-obvious in view of Higgins.

Second, the concentrations disclosed in Higgins do not overlap those of the

instant claims. For example, the cobalt concentration disclosed in Higgins does not overlap the concentration set forth in claims 7 and 15. Applicants would like to point out to the Examiner that the concentrations disclosed in Higgins are in grams per liter, while those of the instant invention are in moles per liter. A cobalt concentration of 0.15 to 0.4 grams per liter as disclosed in Higgins correlates to a mole concentration of 0.0025 to 0.0067. This is clearly well below the range of 0.01 to 0.035 moles per liter of cobalt as set forth in claims 7 and 15. Thus, there is no overlap and it would not be obvious to one of ordinary skill in the art to use a concentration as set forth in claims 7 and 15. For at least these reasons, the Higgins reference fails to render claims 7 and 13-15 obvious. Applicants therefore request that the rejection of claims 7 and 13-15 under 35 U.S.C. §103(a) be withdrawn.

Claims 7-10 and 13-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Crotty. Applicants traverse the rejection.

According to the Examiner, the concentrations of chromium, cobalt, nitrate and fluoride salts and the pH of the bath appear to overlap the concentration as recited in claims 7-10 and 15. The Examiner also contends that Crotty teaches processing conditions that overlap those of instant claims 13-14. While the Examiner acknowledges that Crotty fails to explicitly teach the exact range of composition and processing conditions set forth in claims 7-10 and 13-15, the Examiner contends that the invention would have been obvious to one or ordinary skill in the art because the concentrations and processing conditions taught in Crotty overlap those of claims 7-10 and 13-15. The Examiner has again failed to establish a *prima facie* case of obviousness. Specifically, Crotty fails to teach or suggest all the claimed features of claims 7-10 and 13-15. See M.P.E.P. §2143.03. Applicants note that all of claims 7-10 and 13-15 include a composition having a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1. As previously discussed, Crotty completely fails to teach this ratio. Specifically, Crotty teaches a ratio of 4:1 to 100:1 or higher. There is no suggestion or teaching in Crotty that have a ratio of less than 4:1, much less a ratio of less than 1.5:1. Further, the ratio of 4:1 to 100:1 or higher actually teaches away from using ratios lower than 4:1 and would especially teach away from ratios of less than 1.5:1. Consequently, a person skilled in the art would not be motivated to modify the composition and/or method of Crotty to arrive at a method, conversion coating or conversion coating bath having a composition that includes an

$\text{NO}_3^-/(\text{Cr}^{3+}+\text{Co}^{2+})$  ratio of less than 1.5:1. For at least these reasons, Crotty does not render claims 7-10 and 13-15 obvious. Applicants therefore request that the rejection of 7-10 and 13-15 be withdrawn.

The Examiner has acknowledged that claims 16-24 are allowable. Applicants note that claims 18, 19, 20 and 24 have not been amended for purposes of patentability but rather have been amended to clarify or more clearly define the step of the method referred to therein.

In view of the foregoing, the present application is in condition for allowance. Withdrawal of the rejections and objections and issuance of a Notice of Allowance is requested.

Respectfully submitted,

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December 10, 2003  
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Date
December 10, 2003

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